Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. – 24.   (cancelled)

25. (currently amended) A method for improving a MCrAlY thermal barrier coating made from MCrAlY powder, where M is a metal or metal alloy, comprising:

   providing a MCrAlY bond coat on a substrate; and

   providing a nanocrystalline nano-composite metallic powder coating on the MCrAlY bond coat where the nanostructured nano-composite-coating is prepared by refining the microstructure of a metallic alloy system consisting <u>essentially</u> ~~substantially~~ of MCrAlY powder used to make the nanostructure nano-composite coating to nanocrystalline grain size.

26.   (cancelled)

27. (previously presented) The method of claim 25 where refining the microstructure of the MCrAlY powder to nanocrystalline grain size comprises cryomilling the MCrAlY powder to nanocrystalline grain size including in-situ formation of oxides, nitrides and/or oxynitrides.

28. (previously presented) A method for improving a MCrAIY thermal barrier coating made from MCrAIY powder, where M is a metal or metal alloy, comprising:

    providing a MCrAIY bond coat on a substrate; and

    providing a nanocrvstalline nano-composite coating on the MCrAIY bond coat where the nanostructured nano-composite-coating is prepared by refining the microstructure of a MCrAIY powder and alumina used to make the nanostructure nanocomposite coating to nanocrvstalline grain size, where refining the microstructure of the MCrAIY powder to nanocrystalline grain size comprises cryomilling the MCrAIY powder and refining the microstructure of the MCrAIY powder to nanocrystalline grain size during cryomilling through the introduction of Al_2O_3 particles added during cryomilling.

29. (cancelled)

30. (previously presented) The method of claim 28 where refining the microstructure of the MCrAIY powder to nanocrystalline grain size achieved after cryomilling comprises introducing nano alumina whiskers during cryomilling.

31. – 45. (cancelled)